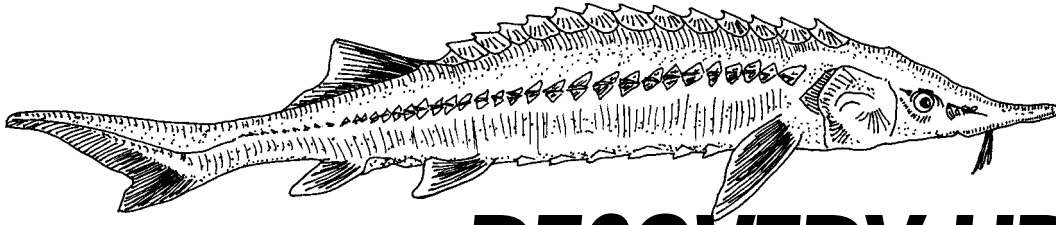


Kootenai River White Sturgeon



RECOVERY UPDATE

Recent Recovery, Research, Monitoring and Management Activities · Issue Number 3 · November, 1999

Editor's Note

The purpose of this *Update* is to provide interested parties with timely information regarding agency and other activities affecting the Kootenai River white sturgeon and the Kootenai River/Kootenay Lake ecosystem upon which it depends. The Kootenai River white sturgeon (*Acipenser transmontanus*) was listed as endangered in September 1994, by the U.S. Fish and Wildlife Service (Service).

Steve Duke, Editor

Final Recovery Plan Approved!

The final recovery plan (Plan) for the Kootenai River white sturgeon was approved by the Service on September 30, 1999. The Plan describes a series of reasonable actions that are believed necessary to recover the endangered white sturgeon. The short-term recovery objectives are to: (1) reestablish successful natural reproduction using Kootenai River flow augmentation, and (2) prevent extinction through conservation aquaculture. The Kootenai River white sturgeon population could be considered for

downlisting to threatened status in approximately 10 years if downlisting criteria described in the Plan are achieved. Ultimately, recovery (or delisting) will be based on providing suitable habitat conditions and restoring an effective population size and age structure capable of providing a self-sustaining population. To receive a copy of the final Plan, please contact *Steve Duke* (208) 378-5345 or *Bob Hallock* (509) 921-0160.

Recovery Team Meets in Spokane

The Kootenai River White Sturgeon Recovery Team recently met for the first time since the Plan was approved by the Service. The Recovery Team met in Spokane in late October specifically to evaluate 1999 Kootenai River research and monitoring studies, and conservation aquaculture activities. As described in the Plan, the Recovery Team will meet annually to review ongoing activities and make recommendations to the Service and other action agencies regarding implementation of the Plan. Contact: *Bob Hallock* (509) 921-0160 or *Steve Duke* (208) 378-5345.

White Sturgeon Reproduction in 1999

During 1999, a total of 184 eggs were collected between June 2 through June 28. Nearly 85% of the eggs were collected from June 2 to June 8 when water temperatures ranged from 8 to 9C and Kootenai River flows ranged from 18,000 to 22,000 cfs (flows actually peaked in late May at around 36,000 cfs). This means that a majority of white sturgeon spawning during 1999 occurred during the early lowland runoff period prior to flow augmentation releases from Libby Dam. Based on observations of radio-tagged fish, most female white sturgeon either completed spawning or moved back downstream before augmentation spawning flows were provided on June 15. Few eggs were collected after spawning flows began. To date, all collected eggs have been staged for pre-hatch development and Idaho Department of Fish and Game (IDFG) is back-calculating the date of actual spawning. Contact: *Vaughn Paragamian* (208) 769-1414.

Evidence of Recent Successful Reproduction in the Wild

Monitoring studies to determine the status of juvenile white sturgeon in the Kootenai River and Kootenay Lake, B.C. has revealed evidence of successful, though limited, natural reproduction. A total of 17 wild juvenile sturgeon have been collected since 1993. This total includes single fish spawned in 1990, 1993, 1994, and 1997, two fish in 1992 and 1995 and ten fish spawned in 1991. Contact: *Vaughn Paragamian* (208) 769-1414.

1999 Kootenai River Flow Augmentation

During 1999, the Seattle District of the US Army Corps of Engineers operated Libby Dam in accordance with the 1995 and 1998 Biological Opinions for Kootenai River white sturgeon and Columbia River salmon. Spring spawning flows were provided for sturgeon in the Kootenai and summer migration flows were provided as part of system operations for juvenile salmon in the lower Columbia. Kootenai River flows period ranged from about 26 to 40,000 cfs. Contact: *Jeff Laufle* (206) 764-6578.

Kootenai Tribe of Idaho Hatchery Update

During 1999, the Kootenai Tribe of Idaho (KTOI) spawned four females with eight males producing a total of 8 families of young white sturgeon. The eggs were incubated on filtered river water and hatching success averaged nearly 80%. To date, six families had a high rate of survival during the onset of feeding while two families experienced high losses with fewer than 200 individuals remaining in each group. Contact: *Sue Ireland* (208) 267-3620.

"Back-up" White Sturgeon Hatchery in Canada Up and Running

After several false starts, the British Columbia (B.C.) Ministry of Environment approved the use of the Kootenay Trout Hatchery located near Fort Steele, B.C. as a back-up or fail-safe facility. Using monies from the Bonneville Power Administration, a portion of the Kootenay Trout Hatchery was upgraded to handle fertilized eggs transported from the Kootenai Tribe Hatchery (KTI). Shortly after the adult white sturgeon were spawned at the KTI, the fertilized eggs were disinfected and prepared for transport across the US-Canada border. Fertilized eggs from only five of the eight white sturgeon families were transported to the Kootenay Sturgeon Hatchery (KSH)

facility. Eggs from only three of the five families successfully hatched and survived. Survival of the young white sturgeon from the three families has been excellent. Contact: *Sue Ireland* (208) 267-3620 or *Jay Hammond* (250) 354-6333.

More Juvenile White Sturgeon Released into the Kootenai River

The Kootenai Tribe of Idaho recently received authorization to release 520 juvenile white sturgeon from the 1998 year class. All of the white sturgeon scheduled for release will be tagged to identify that they are hatchery reared fish. These releases will be in addition to the 2,283 young white sturgeon from the 1995 year class released into the Kootenai River in April and October of 1997. The young white sturgeon were released as part of a 10-year Conservation Aquaculture Program designed to prevent extinction, preserve the genetic variability and rebuild the age-class structure of the remaining white sturgeon population while efforts are undertaken to re-establish suitable Kootenai River spring flows and habitat conditions for recruitment of wild, young white sturgeon. Contact: *Sue Ireland* (208) 267-3620.

Canadian White Sturgeon Studies



Environment is continuing sturgeon assessment work on Kootenay Lake and the Kootenay River in British Columbia. These studies are complementary to those being conducted by IDFG and the Kootenai Tribe of Idaho. Sonic tracking of adult sturgeon in Kootenay Lake has shown these fish are most heavily concentrated at the south end of the lake, at the mouth of the Kootenay River. Other concentrations occur at the north end of the lake (Duncan River outlet) and in the area just south of the lake's outlet near Balfour. Results from this summer also showed the presence of small numbers of both wild and hatchery-reared juvenile sturgeon in the Kootenay River and at the south end of Kootenay Lake. Future work will focus on further monitoring for juvenile fish in the lake and river to assess wild fish production and the success of KTOI hatchery operations. For more information contact *Jay Hammond* (250)354-6343.

Kootenay Lake Fertilization Experiments



The Kootenay Lake Fertilization Project is in its eighth year. The project has resulted in an increased kokanee escapement (Meadow Creek and Lardeau River) from an all time low of 270,000 in 1991 to over two million in 1998 and again in 1999. Kokanee densities in the fertilized North Arm of the lake have increased from approximately 200 fish per hectare (ha) in 1992 to an average of 900 per ha in 1998 (in some site-specific areas of the North Arm, densities have been as high as 3,500 per ha). Nutrient introductions (phosphorus and nitrogen) were decreased in 1997 by 80% due to a perceived carry over of productivity from previous years. This was further reduced by mid-summer to ensure production levels were kept within an acceptable range and the lake is not over-fertilized. However, this reduction may have been too much as total in-lake kokanee abundance showed a decrease in 1999 to approximately 15 million (all year classes) which is about half of the last few years. An initial analysis of phytoplankton abundance in the last two years has also shown a substantial decrease likely resulting from cutting back too much on the fertilizer loading rate. An in-depth analysis of phytoplankton and zooplankton abundance will be conducted this winter to confirm the reason(s) for the large decline in kokanee abundance in the lake. For more information contact *Jay Hammond* (250) 354-6343.

White Sturgeon Genetics Study



Researchers from the University of Idaho's Fish Genetics Lab are conducting a multi-year study to better understand the genetic diversity of white sturgeon in the Pacific Northwest, including the Kootenai River basin. Preliminary analysis of 112 white sturgeon genetic samples from the Kootenay system indicates that white sturgeon in Kootenay Lake and the Kootenai River are one population. In other words, white sturgeon migrate freely between the Kootenai River and Kootenay Lake. Contact: *Paul Anders* (208) 885-2823

Burbot Update



The Idaho Department of Fish and Game continues to sample for burbot in the Kootenai River downstream to Kootenay Lake to estimate the population and evaluate the level of natural reproduction. A total of 130 burbot have been captured since 1995 of which nine have been recaptured. Contact: *Vaughn Paragamian* (208) 769-1414.

Kokanee Update

Similar to recent years, low numbers of spawning kokanee salmon were observed in westside tributaries to the Kootenai River in Idaho and British Columbia. As of October 1, 1999, only 38 adults and 13 redds were observed. The KTOI, in cooperation with the IDFG, will reintroduce kokanee in three tributaries using "eyed" eggs from the more abundant North Arm Kootenay Lake kokanee population this fall. Contact: Sue Ireland (208) 267-3620.

Publication on Kootenai River White Sturgeon Recovery Effort

In July, 1997, Gordon Ennis, the Canadian Department of Oceans and Fisheries representative on the Recovery Team, presented on behalf of the Team, a paper titled *Recovery Plan for Kootenai River White Sturgeon*. The paper was presented at the Third International Symposium on Sturgeon in Placenza, Italy. This paper, along with others presented at the Symposium, has been published in a Special Issue (15/4-5) of the prestigious *Journal of Applied Ichthyology*. Reprints of the paper will soon be available. Contact Doug Rowland, Department of Fisheries and Oceans, at rowlandd@dfo-mpo.gc.ca if you would like to receive a reprint.

KOOTENAI RIVER WHITE STURGEON RECOVERY TEAM

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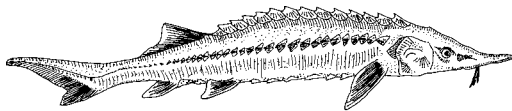
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